DOCUMENT RESUME

ED 297 403 CS 506 303

AUTHOR Williams, M. Michael
TITLE Studying Photographic Advertising Illustrations and Their Effects.
PUB DATE Jul 88
NOTE 30p.; Paper presented at the Annual Meeting of the Association for Education in Journalism and mass Communication (71st, Portland, OR, July 2-5, 1988).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Advertising; *Classification; Color; *Commercial Art; Cultural Context; Information Sources; Lighting; Media Research; Memory; *Nonprint Media; Photographic Equipment; *Photographs; Television Viewing; Visual Perception; *Visual Stimuli
IDENTIFIERS *Advertising Effectiveness; Camera Angles; *Image Analysis

ABSTRACT

A study examined the status of research on effects of pictorial advertising and areas within the field which need additional work. The method of investigation was based on a model of memory, incorporating emotional, semantic, and episodic processing of information--focusing primarily on constructing a preliminary taxonomy of visual stimuli, a visual vocabulary for photographically produced images as used in the American culture in 1987. Three variables in the processed image--color, lighting, and camera angle--serve as examples of components of the taxonomy which are separately investigated. Results showed that the culture in which a person lives is a mediating variable between the observer and the perception. The three taxonomic categories can be applied to intercultural perceptual differences. Future testing will be facilitated by computer-based photographic image editing equipment such as Scitex or Hell, which makes it possible to insert or remove selected parts of photographs, modify colors within a photograph, and integrate multiple images. (One figure and 44 references are attached.) (RAE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED297403

STUDYING PHOTOGRAPHIC ADVERTISING ILLUSTRATIONS AND THEIR EFFECTS

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

M Michael Williams

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

by

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

M. Michael Williams

University of Wisconsin-Madison

School of Journalism and Mass Communication

January 15, 1988

CS506303

STUDYING PHOTOGRAPHIC ADVERTISING ILLUSTRATIONS AND THEIR EFFECTS

The vantage point of an erect stance coupled with color and stereoscopic vision meant humans had richer, more accurate, and more detailed perceptions than any other animal on the planet (Pfieffer, 1977; McKern & McKern 1974). The quality of visual information has led humans to rely on that sense over the others (Brown & Deffenbacher, 1979). If our senses give us conflicting data, the most likely source to be believed is vision. The orienting response (Berlyne, 1951) brings the visual system to bear on the source of the intrusion.

The development of advertising in the last 100 years has been consistent with the primacy of vision, particularly in terms of pictorial representation. This century has seen growth in the amount of advertising, the size of individual ads and in the use of illustrations in advertising. In 1900, only 26% of ads were more than half artwork. In the 1970's, ads with more than half artwork represented 63% of the total (Pollay, 1985). During that same time span the artwork has gone from 18% photographic to 82% photographic (Pollay, 1985).

These figures are only for the print media. Even more dramatically visual is advertising on television, which can be considered to be photographic in nature. If television advertising were entered into the equation, the figures of 63% for advertisements with more than half artwork and 82% of the artwork being photographically produced would certainly have to increase, since all of television advertising is at

least half artwork (perhaps frequently much more than half), and almost all of it is photographically produced.

This primacy of human reliance on vision in a direct, representational manner and use of illustration by advertisers seems to be somewhat at odds with the research priority within the advertising field. Direct communication by image and how image construction affects the communicated message and communications process has been largely ignored when compared to the research on text effects. In short, a picture may be worth the alleged thousand words, but the grammar and vocabulary of the photographic image have largely been ignored by the advertising community.

The focus of this paper will be to examine the status of research on effects of pictorial advertising and areas within the field which may need additional work. In the process, a proposed taxonomy of visual effects will be generated as a basis for future research. This research program will be based on a model of memory, incorporating emotional, semantic and episodic processing of information.

Inattention to advertising photography and its effects is apparent in research on the visual elements of advertising. Often the "ads" used in the studies are rough, crude and nonprofessionally produced. Typically, attention is directed at an element, such as size, termed visual, but which is not a visual element of the photograph in the ad but rather a graphic element of the ad layout. There is seldom any attention to photographic production or communication values in the ads (Percy & Woodside; 1983, Rossiter, 1981; & Reid et al., 1985).

The treatment of visual cues is frequently compressed into general categories, like symbolic association or subliminal orientation, rather than approaching the discussion of visual cues and their effects in a direct manner (Reid et al., 1985). Reid et al. (1977) looked at the creative strategies in what they felt were highly creative television advertising, and only came up with symbolic association for visual variables. In one study Percy & Rossiter (1983) used black and white line drawings of a beer glass, varying only the size. In a second study they used two sets of "rough ads", not finished products. Rossiter (1981) said he was studying visual and psycholinguistic variables, but the only visual variable used was picture size. Holbrook and Lehmann (1980) examined only color or black and white and the size of the photo. Edell and Staelin (1983) proported to be investigating information processing of pictures in print advertising but only whether the copy was related to the photograph. Childers and Houston (1984) examined the effect of pictures on memory, but used visual stimuli selected from yellow pages, reconstructed by an artist and copied onto 35mm slides.

These examples of many of the current investigations of visual effects in advertising can hardly be expected to yield results that measure the actual impact of visual advertising as it really exists, and certainly do not investigate the components of the visual vocabulary and grammar necessary to be able to generate hypotheses about visual communication.

Although the majority of advertising research has failed to deal with the richness of the visual image, there are glimmers of interest in the

area. For example, soft edged photos (soft focus), camera use (camera angle, lighting, dissolves, zoom shots, camera proximity and number of shots) and photographic backgrounds have played roles in recent advertising research (Keon, 1983; Haley et al., 1984; Belk and Pollay, 1985). Schmalensee (1983), in a call for more sophisticated advertising research, listed as research top priority questions about settings, color, realism and scenic and personal beauty (Schmalensee, 1983).

An area where research with visual variables has been most developed is semeiotics. Barthes, a semeioticist working in visual communication, offers us a starting point for looking at photographs.

> "Of the two structures, one is already familiar, that of language (but not, it is true, that of the "literature" formed by the language-use of the newspaper; an enormous amount of work is still to be done in this connection), while almost nothing is known about the other, that of the photograph" (Barthes, 1977).

Barthes distinguishes the denoted and connoted messages in a photograph. Denoted messages are the anologon of the photograph. The "anologon" is the uncoded, unbroken representation of the original scene in the photographic image. In contrast, the connoted message is the manner in which the society to a certain extent thinks of it. This is the imposition on the purely literal image a second meaning or cultural interpretation of the significance of the photographic image (Barthes, 1977). In other words the connoted message of a photograph is determined by the culturally assigned values connected to the images in the visual representation (Arnheim, 1967; Hall, 1966; Cohen, 1986; Curl, 1984; & Kanizsa, 1979).

Barthes suggests four ways in which photographs can create connotative meaning:

Pose is the use of stereotypic images to convey connotative messages. A common example of this is the mother and child or "Madonna" pose.

Trick effects where connotation poses as denotation. An example of this is an ad for a video game in which, to vividly show the realism of the game, spaceships were shown breaking out of the television screen into the room.

Symbolic objects can be used to convey connotative associations. An example is a Ferrari or other exotic car in an advertisement associating the product with the image of wealth, status, etc. associated with that type of car.

Syntax is the use of series or sequences of images to send messages. A before and after commercial would be an example of an interaction of order and images to send a message (Barthes,1977).

Although Barthes work provides an important first step in studying how visual images work, it does not develop a specific vocabulary with which to discuss differences in photographic images. Instead it creates only global categories of effects such as outlined above. To understand how visual images affect processing, advertising needs a vocabulary and grammar with which to describe the image, explain how the image is constructed, and identify the interrelationships among the image components. What is needed is a more specific vocabulary of visual variables such as color, lighting, and camera angle, as well as a grammar to delineate the interreactions between these variables or "visual words".

The primary focus of this paper will be to construct a preliminary taxonomy of visual stimuli, a visual vocabulary for photographically produced images as used in the American culture in 1987.

Delineation of these visual variables should then make it possible to generate hypotheses about how the variables affect people's processing of them. To create such a taxonomy, a technical description of possible photographic variables and an examination of the culturally accepted effects of these variables must be undertaken. The structure of the taxonomy will rest on the technical aspects of the media. All of the listed perceptions or effects of these technical manipulations are really quite arbitrary, and should be considered in need of experimental verification even for our culture. Any generalization to cultures that differ from mainstream America is, at best, likely to produce invalid results (Hong, Muderrisoglu & Zinkhan, 1987).

Visual, in this particular usage, refers only to those representations that attempt to convey an image that could occur in nature as we know it, or extrapolations of what nature could look like to the human visual senses. This is meant to include depictions of scenes and situations in the future or as perceived under altered perceptual states. The print media have specialized visual components such as type face, graphic elements of space usage, and type size which are not included in this taxonomy.

Perhaps the same taxonomy could be used in reference to all visual stimuli, but the intent here is to look at photographically produced images. The scope of these images are intended to be still photography, motion picture photography, and television images produced with a television camera instead of a motion picture camera. Drawings, paintings, airbrush, animated visuals, and computer generated images are outside the realm of the present inquiry, but in the future the results

of investigating photographic images may be generalizable to all visual stimuli.

The first of two elements of any category in this taxonomy are the technical/objective/physical attributes of a photographic image. This category largely represents Barthes' denotative category of effect in being totally representative and concerned with technical image production. The second element, which is equivalent to Barthes' connotative, is how the technical element works to produce a meaningful experience for the viewer. This process probably is understandable only as the product of the sociopsychological filter imparted to us by our culture (Koestler, 1969).

The taxonomy is divided into four categories: (1) light, (2) camera perspective, (3) design variables and (4) subject variables. A description of each category and its elements follows.

Section 1:

Light as a variable that may affect processing of a photographic image.

A. Natural or Artificial light

Natural light is frequently used, either as the only source or in combination with artificial light in depicting outdoor activity set in the daylight hours. Special cases of daylight such as sunsets, moonlight, eclipses are used to give a particular meaning (Sunset=end of day=rest=pleasure; moonlight=romantic implications).

Artificial light is used to denote evening or night activities or settings with special types of light sources used to define particular locations and occasions. Fireplaces and firelight are an example of the

latter.

B. High key or Low key light

High key light(ing) produces an image with no very dark tones and no black. Only light tones are used. In some cases, this is viewed as a happy, innocent, hopeful, open or feminine technique. Low key light(ing) produces an image consisting exclusively of tones from middle grey to black.In some cases this has been seen as depicting sadness, misery, mystery, ominousness or masculinity (Curl, 1984).

C. High/Low/Normal Contrast in the finished image

High contrast exists if the relationship of image tones are biased toward the highlight end and the deep shadow end of the tonal range at the expense of the mid range tones.

Low contrast exists if full range of tones is not present in the image. The highlight whites or the deep shadow blacks or both may be missing in a low contrast image.

Normal contrast represents the full range or white to black including a full range of middle grays.

D. Source to Subject Lighting Relationship

Backlighting is having the primary light source in back of the subject. The effect of this varies greatly depending on how much light is falling on the camera side of the subject. If there is little, the effect can be malevolent or mysterious. If there is a good deal of front light it can be very warm, friendly and glowing.

Front lighting, if flat and unrelieved, is either very documentary (as in a "mug shot") or very uncaring.

Sidelighting can be varied both in appearance and effect. It can be classic and "arty", as in "Rembrandt" lighting, or hard and threatening, as in hatchet lighting which illuminates exactly half of a face or object.

Edgelighting is a subset of backlighting in which only the edge of a visible object is lit and the rest left dark.

Butterfly lighting is lighting placed high and in front of the subject. This is usually used for portraits considered glamor shots.

Low lighting places the light source lower than the subject and usually in front. This produces lighting not found in nature and is generally perceived as threatening and mysterious (Upton & Upton, 1985; & Doeffinger, 1984).

E. Diffuse or Point Source Light

Diffuse light is light from a large area near the subject and in casting soft shadows lends modeling or roundness to the subject.

Point source light comes from a small area such as a spotlight or the sun and it casts hard shadows making objects appear in stark relief without much modeling.

F. Normal or Brief Duration Light

Normal duration light yields the effects we are used to seeing. Here you have normal motion and depiction of motion relative to time in motion photography and in relation to shutter speed in still photography. In short, blurring occurs when an objects image is in motion on the film during the exposure (Moholy-Nagy, 1936).

Brief duration light can freeze motion in still photography or make the motion appear intermittent or noncontiguous in motion

photography.

G.Color

1. Pastel or Partial Color Palate

Reduced color intensity and a pastel rendition of a scene are produced by: 1) very diffuse light, 2) the full color spectrum not available in the scene, 3) overexposure desaturating the colors, or 4) diffusion of the light reaching the camera from the subject. The effect is a soft dreamy surreal quality in the image.

2. Full Color Palate

Full color renders the scene either naturally or with extraordinarily vivid color. The exaggeration of color may tend to be highly stimulating to the viewer.

3. Color Itself

The differences are usually drawn between the warm and the cold colors. Red, yellow, orange and sometimes brown are put in the warm group. Blue, green and cyan are seen as cold colors (Stroebel et al., 1980). The warm color are seen as active, advancing and exciting. The cool colors are seen as passive, retreating, calming and distancing (Curl, 1984).

Section 2:

Camera perspective as a variable that may affect the processing of a photographic image.

A. Objective or Subjective perspective

Here the choice is whether the camera appears to be an observer of the action taking place or sitting in as a participant. This is a combination of several factors which will appear in other subsets such as

lens length, camera distance, camera perspective (height relative to subject), and, if the set/subjects are either multiple or complexly arranged, the location of the camera relative to the subjects (Upton and Upton, 1985).

B. Distant or Intimate perspective

Here the variable is whether the camera appears to be at an intimate, interpersonal or impersonal distance from the subject(s). An entire group of terms is generated for the motion picture area in this set. The longest possible shot is said to be an establishing shot and includes the entire area in a scene or in the production. A medium shot shows only a portion of the scene, but is not tightly framed enough to eliminate all but one potential center of interest. A closeup eliminates all but one center of interest or conflict and is close enough to the subject(s) to be considered well into interpersonal space and possibly in intimate space (Deschin, 1960; Appel, 1983; & Stroebel et al., 1980).

C. Lens Perspective

Wide angle lenses include more than what most people feel they normally see. There are several effects this produces.

Perspective changes and the convergence of linear perspective appears to happen more rapidly producing feelings of spaciousness, distance from the object, distortions of objects close to the lens and a lessened perception of speed relative to the environment. Normal lenses tend to render the environment as we usually perceive it. Telephoto lenses produce effects the opposite of the wide angle lenses. Proximity to objects, visibility of aerial perspective, lessening of distance between objects in the scene and flattening of perspective are all effects of

telephoto lenses (Curl, 1984; Goldman, 1984; & Gillespie-Woltmeade, 1984).

D. Soft Focus and Sharp Focus

These terms are self defining except to say that soft focus is a special technique by which a degree of sharpness is retained. Soft focus creates a soft, surreal, or dreamy effect in the image. The tack sharp image tends to give a more factual/realistic image that has an air of conveying hard information (Moholy-Nagy, 1936; Defense, 1961; & Jussim, 1974).

E. Point of View

Mostly this is used to establish the spacial relationship between the camera and the subject. The range here is from low point of view which "looks up" to the subject literally and perhaps metaphorically, through "seeing eye to eye" with the subject to "looking down" on the subject. All of these probably affect perception of the image literally as the camera position relates to the subject.

F. Motion Stopped or Blurred

This looks at whether the motion of the camera or subject or both is shown as arrested or allowed to sweep past the camera fast enough to not register sharply, and, in doing so, leave the impression of motion so fast as to not be able to be stopped. The blur seems more natural and the stopped more artificial or controlled (Ivins, 1953).

G. Camera Motion/Subject Motion/Both in Motion

To a large degree the technical differences are apparent but the

literature has failed to assign any meaning to these differences. There might be a relationship of power (ability to move) operating in this context. The rates of motion, the clarity of the backgrounds and the relationship of the motion to background probably will also contribute meaning.

H. Special Camera Motions

Compositional motion in a motion sense is the movement of the camera to change the relationship of the objects in the scene and thereby the message of the image.

A dolly shot is a shot were the camera moves into or out of a scene without changing the perspective of the camera (using a fixed focal length lens).

A zoom shot looks much like a dolly shot except the perspective changes through the shot since the focal length of the lens changes from wide angle on the most distant shot to telephoto on the tightest shot.

Panning is having the camera pivot about a point to follow a moving object or to show us a panoramic view of a scene. If the purpose is to follow a moving object, this may be combined with a zoom to keep the object close to constant size.

A boom shot is when the camera is mounted on a mechanism to elevate it well above the scene or bring it down to the subject's level (Defense, 1961).

Section 3:

Design variables that may affect processing of a photographic image.

A. Framing

This is simply the choice of subject matter to include in the

image. The comment is repeated over and over again in the literature that the framing or choice of subject is one of the most important items a photographer can control (Deschin, 1960; Upton and Upton, 1985; Barthes, 1981; & Kracauer, 1960).

B. Details

The inclusion of details in an image can totally alter the meaning of an image. One example that comes to mind is including an obnoxious insect like a fly on an otherwise attractive subject (Goldwater, 1979; Rothschild, 1976; Barthes, 1972; & Sekula, 1975). One intrinsic element of photography is the grain of photographic film and even this may be seen as a significant detail (Geis, 1982).

C. Line

Lines of differing shapes and differing relationships within the photograph may carry meaning. Diagonals seem to signify action and vitality. Horizontals are equated with calmness. Verticals suggest strength, dignity or stability (DuBois, 1983; & Deschin, 1960).

D. Shape

Various shapes are seen as having given effects on viewers. Triangles are strong and stable while squares and rectangles symbolize dignity and regularity (DuBois, 1983).

E. Texture

Texture is important in several ways in photography. It gives a viewer clues as to how close they are to an object. It also gives the viewer clues about how the object would feel if it were touched which

gives additional associational value (Strobel et al., 1980).

F. Single/Multiple Images

This deals with two factors, either simultaneous or sequential multiple images. This can refer to more than one image at a time on a screen or in a print ad or to the sequence of scenes in a video or motion picture. Variables are the number of images involved, the portion of the overall image available to any single subimage, and the rate of presentation of the images in a motion sequence (Geis, 1982; & Upton and Upton, 1985). Also included in this are the interscene change techniques of cuts, dissolves, superimposition, wipes, irising, and others (Defense, 1961).

G. Illusory vs. Representational

Here distinctions are drawn on the basis of how real the image probably is. The representational would lend itself to concrete, factual approaches in ads where the illusory would tend to lend itself to fantasy type ads.

H. Ambiguity vs. Clarity

The more ambiguous or generic the image the more the person seeing it can project into the ad and the more of their own background will be accessed in the process, probably leading to more feeling of involvement (Pollay and Mainprise, 1983; & Haber, 1970).

Section 4:

Subject variables that may affect the processing of a photographic image.

A. People

A multitude of factors are involved in this area: number of people, age(es), gender(s), interactions, relationships with other people and the environment, etc. Frankly, this area is in reality a study unto itself but needs to be mentioned since it is part of image structure.

B. Objects

This variety is also endless: number of objects, simple object, complex object, relationship to other objects and people in the ad, etc. Again this is a subject for study in its own right, but is part of visual taxonomic structure.

C.Background/Setting

Much of the background of a photo may be used as cues with which to decipher the meaning of the image or as part of the message itself. The setting can provide the context for the advertised item for both literal comprehension and symbolic association (Reid et al., 1985; & Belk and Pollay, 1985).

Any and/or all of these elements of a visual vocabulary may combine with any or all of the others to form a complete visual statement, a finished photograph, processed as a whole. One of the failures of prior attempts to investigate visual communication has resulted from using a serial or linear processing model. This type of processing uses one element at a time, processing and analyzing each element individually to build a concept. Linear models are appropriate for language processing, which is structured in a linear manner. But photographic images are structured and presumably processed holistically. This does not imply that the holistic structure must be investigated as an immutable whole. The parts within the structure can be varied, and, as specific elements, they

can serve as variables in hypotheses about how visual stimuli function to affect people. The holistic structure of a photographic image tends to combine all elements of the communication into a single event (Barthes, 1977). This means that emotional meaning, attitude, brand identification, semantic information, plus a host of direct images impinge on the viewer as a unit. This, then, defines the impact of photographic information as an event or episode and needs special treatment in processing.

The vast majority of investigations into information processing and memory have been concerned with the logic structured function called semantic memory. It is here that all knowledge possessed by a person is stored and recalled in a language based manner. The organization is posited as being like a tree in going from large structures or categories to finer and more precise categories. An example of this would be to look at a person's knowledge of the category called "computer". Here the main branch would be relevant to everything from an abacus to the newest supercomputer. A sub branch would be personal or micro computers. A sub branch from here would perhaps have one manufacturer's equipment only. The finest branch would be information on one model that this manufacturer makes or one fact about that model.

This memory model ignores an entire category of recall. This category is the type used if a person were told to remember their wedding, graduation, or other highly significant occasion. Would they remember it categorically? Probably not. It probably would be recalled as the time based event it was with all of the sensory and emotional input intact. In

essence, what would be recalled would be an episode from the person's life. According to Tulving (1983), the recall of events in a time based fashion does demonstrate the existence of an episodic memory system to compliment the semantic memory. This corresponds to the process of looking at a photographic image. A photographic image is experienced over the period of time the viewer spends looking at the image. During this time all of the items visible in the photograph and plus associated emotional information, product information, brand information are processed and remain with the image stored as an episodic memory.

The semantic and episodic memories form the basis for an overall model of memory. This model is built on the work of Wyer and Srull (1982, 1986) and Tulving (1983). A third main storage category, the procedural storage, gives emotional Stimulus-Stimulus and Stimulus-Response links a separate memory area in response to the demonstrated effectiveness of emotion in advertising (Thorson & Friestad, 1984). The exact structure of this model is very close to Thorson's (1987) model with the exception of working memory and sensory input being assigned dual conscious and nonconscious roles and procedural storage being directly connected to sensory input. This system allows the storage of all information encoded

---

INSERT DIAGRAM 1 HERE

---

as a single episode to remain as an undivided memory unit. It also permits the delivery of information from several storage areas on a question under consideration to be concurrently fed into the work space for consideration.

The consideration of these different aspects are important for the processing of photographic images since they contain a rich diversity of information. Looking at an ordinary photographically based advertisement, welter of information is apparent. In a recent "MORE" ad the cigarette box is red, a color which is supposed to imply warmth, action and adventure (Curl, 1984). The lines in the photograph are mainly vertical, a direction having strength and dignity (DuBois, 1983). The models are dressed in evening wear tending to give them the image of being well off financially and perhaps out having a good time. The posing implies a degree of interest of the man in the woman, possibly generating an emotional response in the female viewers. The woman holding a pool cue and cigarette is a nontraditional image for a woman, unthinkable for use in a women's magazine 25 years ago, and probably still an attention getting device. The advertisement seems to mean that smoking a "MORE" cigarette is a part of a romantic, exciting, upbeat style of life. However, the entire message is an organic whole which is comprehended as a unit. Rarely does a viewer see these separate elements. What is processed by a viewer is the entire image.

As stated previously, this holistically processed image can be looked at component by component to furnish variables with which to investigate the impact of the photographic image. Any of the components of the taxonomy can be separately investigated. For the moment color, lighting and camera angle can serve as examples.

If one wishes to investigate the dimension of color effects in advertising, there are a number of approaches. All aspects of color can be

manipulated to determine the effect of color change of any element of an advertisement, be it the background, a single item or several items. Color changes include the color itself, the hue, intensity or saturation of the color and the overall color balance of the scene. Several items in the scene can be manipulated at the same time offering almost infinite sets of interrelationships. In this example the color of the box will be the variable and it will be presented as red, green and blue.

A second variable that could be used is lighting. Lighting is defined in terms of direction of lighting and the ratio between a main light source and sources that fill in the shadow to prevent total blackness in shadow areas. This particular advertisement is shot with side lighting called 3/4 lighting since the main light source is not off directly to the models' left but on their front left. The lighting ratio, the ratio of light left to right, is in the 2:1 range. The types of lighting could be manipulated to produce an almost infinite range of variables, but in this example the variables will be 3/4 lighting, Rembrandt lighting and hatchet lighting all at a 2:1 ratio.

A third basic variable is camera angle. This establishes the point of view of the photograph and the projected nature of the relationship between the viewer and the object of the photograph. Camera angle is frequently defined by the camera position being at the eye level of the main subject in the photo, above that level or below that level. These are neutral, high and low camera angles.

This type of design will yield a 3x3x3 design amenable to the application of anova for analysis of results and should be done in as

ecologically valid a method as possible, such as using tip-in additions to regular magazines. This type of independent variable pattern is obvious, but what is not obvious is that it is in reality making an almost infinite number of variables available for investigation. Instead of varying between colors, the base "red" could be varied in intensity, hue and saturation to provide the color variable without introducing more than the original "red" hue. Instead of using different types of lighting as variables, the main light to fill light ratio within a single type of lighting could be used as a variable. The three distinct angles could be replaced with degree by degree changes in camera angle. What is also not obvious is that in doing a multiple variable design using more than one of the taxonomic categories as dependent variables, one is starting to develop the relationships between the categories and "words" within the categories.

There may eventually be many places where there are no effects observed from small changes in a given category, but significance may lie in the relationship between changes in more than one category. This may lead to insight into the nature of interrelationship variables in the visual communication field. Ultimately this set of interrelationships, as developed through an extended program of research, may form the basis for the grammar of visual communication. In addition, this multivariate research design has the advantage of maintaining good ecological validity by allowing the use of multiple variables and multiple messages. This eliminates the inability to generalize from single message designs (Jackson and Jacobs, 1983; & Petrinovich, 1979) and treating variables in isolation without accounting for interactive effects .

The use of multiple dependent measures in this research will also be important since the overt response of the subjects at times may not be accessible. At other times the open ended free associative response method may yield more than any structured form of measurement. Exploration of attitude toward stimulus, brand and product, memory examined as both recall and recognition, attention, familiarity with stimulus, brand and product, involvement with the product or brand, and other marketing questions will probably be accessed by traditional written post stimulus measures. Direct physiological responses measures such as EEG, GSR, EMG, pulse rate, respiration, and others may be useful to point out effects not directly accessible by post stimulus verbal measures. The reaction to color might be nominal on a post stimulus written test but directly measurable on direct physiological measures. The effects of background objects and other heavily culturally loaded items included in a photograph might be missed by any measure other than open ended response situations.

The field of visual communication is so relatively unexplored that until after initial investigation, the most effective measurement methods are open to question and expansion, as is the basic taxonomy. The initial establishment of given response patterns in a given culture might include open ended responses to photographs by subjects and a subsequent additional questioning of what in the photograph gave rise to that response.

Specific investigations of the taxonomy for each separate culture will be important because the culture in which a person lives is one of the few factors that can strongly affect what gets into storage, therefore being available for processing by the individual. The cultural basis for

understanding visual language is stated in many works from many points of view (Leymore, 1975; Barthes, 1977; Kepes, 1976; Jussim, 1974; & Goldman, 1984). Perhaps the references to photography as a "universal language" arise from the near universality of a few expressions (a smile) or conditions (birth or death) being highly visible via photography (Craven, 1975; & Curl, 1984). Such does not seem to be the case when complex socially based stereotypic images are used in advertising (Barthes, 1977). Also, the superimposition of both denotative and connotative messages on the same image further seem to complicate the matter unless the culturally based nature of connotation is used. The cultural meaning of images allows the viewers to build their own message from the combination of the denoted image and internally carried cultural meanings of those images (Pollay and Mainprise working paper, 1983; & Barthes, 1977).

Put most simply, the culture in which a person lives is a mediating variable between the observer and the perception. This is as true in visual as in verbal communication. The three taxonomic categories used before, color, lighting and camera angle, can be applied to intercultural perceptual differences. Color can take on meanings that vary substantially from culture to culture. Even in religion, a strong cultural variable, different colors play central roles "in terms of hues: yellow in the Orient, Green in the Middle East, and blue/red in the western world" (Garcia & Fry, 1986).

Lighting tends to emphasize or suppress detail, and would heavily affect perception if there was figure ground confusion as there is with people who have a low degree of visual literacy. Camera angle determines the apparent relationship of foreground and background items. In the case

of low camera angle a person in the foreground could appear taller than large structures in the background to a person who has limited visually literacy (Cohen, 1986). All of these are examples of relatively large perceptual differences between other cultures and the current culture in the United States. Undoubtedly differences exist in the visual perception of any culturally disparate groups, no matter how small the disparity.

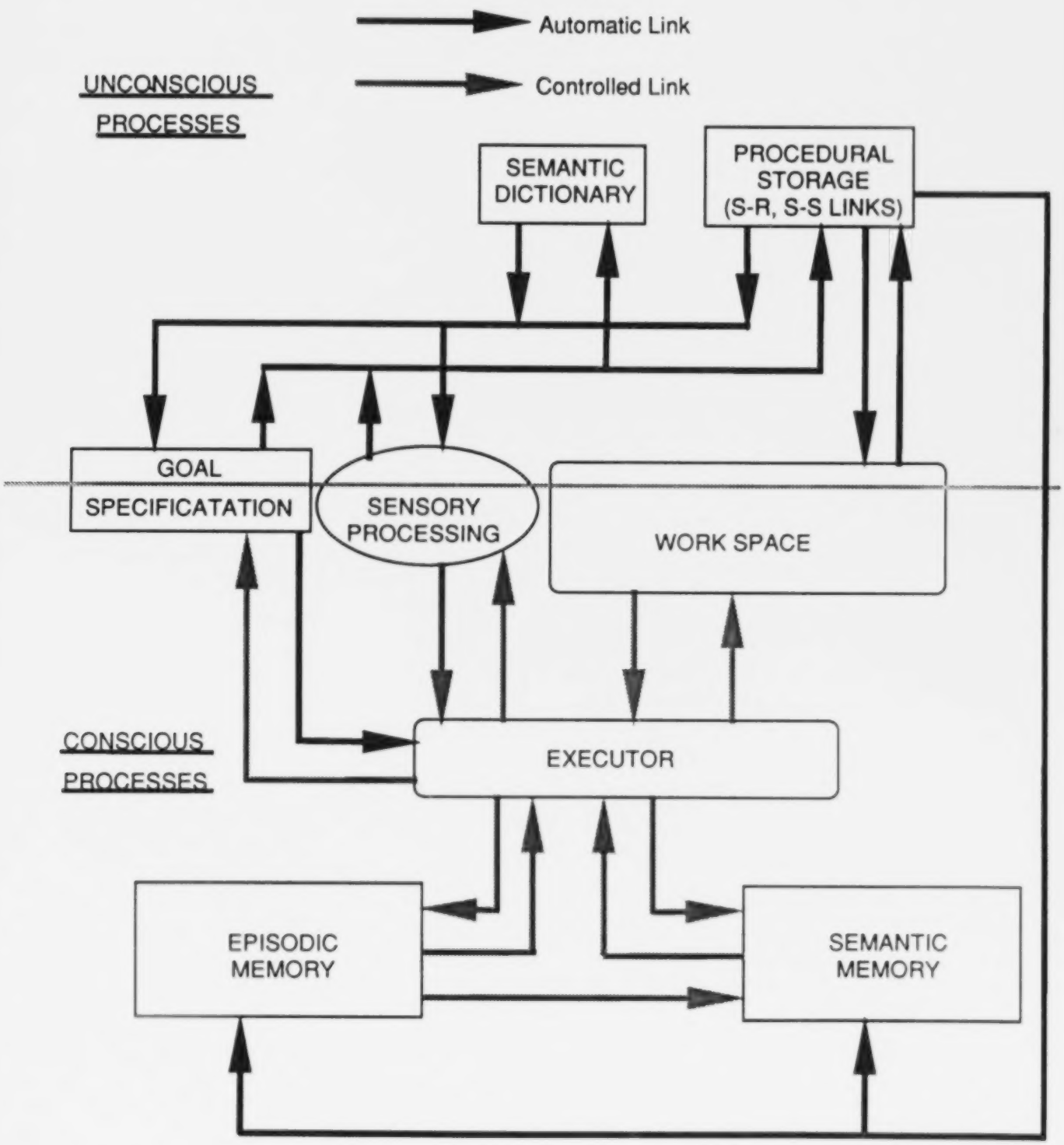
Investigating how each of these variables could be tested will be a long process due to the number of variables involved and the number of potential relationships. Some types of variable will need the creation of extensive sets of professional quality photographs to test. Some of the testing will be facilitated by computer based photographic image editing equipment such as Scitex or Hell. This equipment makes it possible to insert or remove selected parts of photographs, modify colors within a photograph and integrate multiple images.

Even with this new equipment, the field of photographic images and the effects they produce is so little understood at the present that it will be years before a basic comprehension is attained. With the rapid growth of advertising based on photographic images in the last 90 years, including the photographically based media of television, the advertising field is overdue to seriously and intensively examine the role photography plays in producing advertising results.

figure 1

Simultaneous Automatic and Controlled Links

in Consumer Processing



Appel, Alfred Jr., Signs of Life. New York: Alfred A. Knopf,1983.

Arnheim, Rudolph, Psychoanalysis and Religion. New York: Bantam Books, 1967. In Zakia, Richard D., Perceptual Quotes for Photographers. Rochester, N.Y.: Light Impressions, 1980.

Barthes, Roland, Mythologies. New York: Hill & Wang, 1972.

Barthes, Roland, Image Music Text. New York: Hill and Wang, 1977.

Barthes, Roland, Camera Lucida: Reflections on Photography. New York: Hill and Wang, 1981.

Belk, Russell & Pollay, Richard W., "Images of Ourselves: The Good Life in Twentieth Century Advertising". Journal of Consumer Research, 11 (Mar.1985) 887-897.

Belk, Russell W. & Pollay, Richard W., "Materialism and Magazine Advertising During the Twentieth Century". Advances in Consumer Research, Vol. 12, 1985.

Berlyne, D.E., "Attention to Change". British Journal of Psychology. 1951, 42, 269-278.

Bernstein, Basil, "Elaborated and Restricted Codes: Their Social Origins and Some Consequences". in Smith, Alfred G., Communication and Culture. New York: Holt, Rinehart and Winston, 1966.

Brown, Evan L. & Deffenbacher, Kennneth, Perception and the Senses. New York: Oxford University Press, 1979.

Cohen, Judy, "Pictorial Perception and Cross-Cultural Promotion". Paper presented at American Marketing Association workshop on culture and sub-culture at DePaul University, Chicago, December 5, 1986.

Coran, Stanley, Porac, Clare, & Ward, Lawrence M., Sensation and Perception. Orlando, Fl.: Academic Press, 1984.

Craven, George M., Object and Image. Engelwood Cliffs, N.J.: Prentice Hall, 1975.

Curl, David H., Photocommunication: A Guide to Creative Photography. Oshtemo, Mi.: Oak Woods Media, 1984.

Defense, Department of, Military Standardization Handbook Glossary of Photographic Terms Including Document Reproduction. Washington, D.C.: United States Government Printing Office, 1961.

Deschin, Jacob, Say It With Your Camera. New York: A.S. Barnes, 1960.

Doeffinger, Derek, The Art of Seeing. Eastman Kodak Co., Rochester, N.Y., 1984.

DuBois, William W. & Hodik, Barbara J., A Guide to Photographic Design. Engelwood Cliffs, N.J.: Prentice Hall, 1983.

Fowles, Jib, "The Bait in the Grand Bait and Switch." in Shapiro, Ira, American Photography Showcase, Vol. 8., New York: American Showcase, Inc., 1985.

Garcia, Mario R. & Fry, Don (Eds.), Color in American Newspapers. St. Petersburg, FL.: The Poynter Institute, 1986.

Geis, Michael L., The Language of Television Advertising. New York: Academic Press, 1982.

Gillespie-Woltmade, Nellice, "Power, Politics, and Photography". Humanity & Society, 1984, 8(4), 385-392.

Goldman, Robert, "Decoding Newsphotos: An Analysis of Embedded Ideological Values". Humanity & Society, 1984,8(3), 351-363.

Goldwater, Robert, Symbolism. New York: Harper Row, 1979.

Greenberg, Joseph H., "The Linguistic Approach." in Smith, Alfred G., Communication and Culture. New York: Holt Rinehart & Winston, 1966.

Haber, Ralph, "How We Remember What We See". Scientific American, May 1970. In Zakia, Richard D., Perceptual Quotes for Photographers. Rochester, N.Y.: Light Impressions, 1980.

Hall, Edward, The Hidden Dimension. New York: Doubelday, 1966. In Zakia, Richard D., Perceptual Quotes for Photographers Rochester, N.Y.: Light Impressions,1980.

Hong, Jae W, Muderrisoglu, Aydin, & Zinkhan, George M., "Cultural Differences and Advertising Expression: A Comparative Content Analysis of Japanese and U.S. Magazine Advertising". Journal of Advertising, 16(1), 1987.

Ivins, William M. Jr., "New Reports and New Vision: The Nineteenth Century Prints and Visual Communication". M.I.T. Press, 1953. In Trachtenberg, Alan(Ed.), Classic Essays on Photography. New Haven, Con.: Leete's Island Books, 1980.

Jussum, Estelle, Visual Communication in the Graphic Arts. New York: R.R. Bowker Co., 1974.

Kanizsa, Gaetano, Organization in Vision: Essays on Gestalt Perception. New York: Praeger 1970.

Kepes, Gyorgy(Ed.), Sign Image Symbol. New York: George Braziller, 1980.

Kracauer, Segfried, Photography: The theory of Film: The Redemption of Reality. Oxford University Press, 1960. In Trachtenberg, Alan(Ed.), Classic Essays on Photography. New Haven, Conn.: Leete's Island Press, 1980.

Leymore, Varda Langholz, Hidden Myth: Structure & Symolism In Advertising. New York: Basic Books, 1975.

McKern, Sharon S. & McKern, Thomas W., Living Prehistory:An Introduction to Physical Anthropology and Archaeology. Menlo Park, Ca.: Cummings Publishing, 1974.

Moholy-Nagy, Laszalo, "From Pigment to Light". In Goldberg, Vicki(Ed.), Photography in Print. New York: Simon & Schuster, 1981.

Pollay, Richard W. & Mainprise, Steve, "Captioned Visuals in Print Advertising: A Typology of Techniques". Working Paper No. 938, Proceedings of the American Academy of Advertising, 1983.

Pollay, Richard W., "The Subsiding Sizzle: A Descriptive History of Print Advertising: 1900-1980". Journal of Marketing, 49 (Summer 1985), 24-37.

Pollay, Richard W., "The Distorted Mirror: Reflections on the Unintended Consequences of Advertising". Journal of Marketing, 50 (April 1986), 18-36.

Rothschild, Lincoln, Forms and Their Meanings in Western Art. New York: S.A. Barnes, 1976.

Sekula, Alan, "On the Invention of Photographic Meaning". Artforum, 1975, 15(5), 36-45.

Smith, Alfred G., Communication and Culture. New York: Holt, Rinehart & Winston, 1966.

Strobel, Leslie, Todd, Hollis & Zakia, Richard, Visual Concepts for Photographers. New York: Focal Press, 1980.

Upton, Barbra London, & Upton, John, Photography. Boston: Little Brown, 1985.